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EXAMINER	
PARK, JEONG S	
ART UNIT	**PAPER NUMBER**
2154	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,609	CLARK, JONATHAN A	
	Examiner	Art Unit	
	Jeong S. Park	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 10 and 12 are objected to because of the following informalities:

In claim 10, line 1, the phrase "the a method" should be corrected as –the method-- for clear understanding of the claim; and

In claim 12, line 1, the phrase "the plurality of data routes" should be corrected as –the plurality of routes-- for clear understanding of the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 11-13 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Even though the overall data rate is inherently an aggregation of individual data rates when sharing the multiple paths or routes together, the specification was not described the claimed subject matter.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel et al. (hereinafter Zisapel)(U.S. Patent No. 6,665,702 B1) in view of Apostolopoulos et al. (hereinafter Apostolopoulos)(U.S. Patent No. 6,868,083 B2) and further in view of Mizuno (U.S. Pub. No. 2003/0018741 A1).

Regarding claim 1, Zisapel teaches as follows:

A server (150 in figure 3A) for providing data (polling results) on receipt of requests (polling requests) from user terminals (client 105 in figure 3A via a content router 145 in figure 3A) over a distributed information network (Internet 110 in figure 3A) (provide efficient connectivity between client and Internet servers by sending polling request and receiving reply, see, e.g., col. 15, lines 66-67 and col. 16, lines 15-18), said server comprising:

First means arranged to identify whether a plurality of addresses (content router, 145 in figure 3A, assigns respective network addresses to client 105 in figure 3A, see, e.g., col. 16, lines 11-12) making a corresponding plurality of requests for identical data (three polling requests are sent to the same destination, see, e.g., col. 16, lines 12-13) are associated with a same end user (the content router provides efficient connectivity between client 105 in figure 3A and Internet servers, which implicitly provides the end user's address to the Internet servers, see, e.g., col. 15. line 56 to col. 16, line 3).

Zisapel does not teach that splitting the requested data and streaming different

parts of the data to the different addresses requesting it.

Apostolopoulos teaches as follows:

A path diversity transmission system for improving the quality of communication over a lossy packet network and the path diversity transmission system sends different subsets of packets (different pats of the data) over different paths (different addresses requesting it)(see, e.g., col. 3, lines 32-36).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include splitting the requested data and streaming different parts of the data to the different addresses requesting it as taught by Apostolopoulos in order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Even though Zisapel implicitly teaches providing end user's address to the Internet servers, Mizuno explicitly teaches as follows:

A storage subsystem that directly interfaces with a network, provides connections for routers with a multi-path function, and performs access load balancing among a plurality of input/output ports. Each channel controller is assigned with a channel controller network address, and a storage device is assigned with a storage device address, which is different from the network addresses of the channel controllers (see, e.g., abstract);

The channel controller (403-410 in figure 1) makes the external router (403 in figure 1) believe that there is a device with the storage device IP address which is different from the IP addresses assigned to the channel controllers (the storage device

uses its own device IP address and multiple network IP addresses, see, e.g., page 3, paragraph [0063]); and

The router (402 in figure 1) the channel controllers (403-410 in figure 1) are interconnected with each other via the input/output ports and an access packet is sent from the host computer (401 in figure 1) to access the storage device (460 in figure 1). The access packet designates the address of the storage device (see, e.g., page 3, paragraph [0066]).

Therefore Mizuno teaches the communication between a host computer and a storage device via multiple channel controllers' IP addresses, and the storage device IP address is given to the host computer for this communication.

Also it is well known in the art that any sending device knows the address of receiving device as well as the IP addresses of routers in the multi-path routing.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include using channel controller's IP address and the storage device's IP address together in communication between the host computer and the storage device as taught by Mizuno in order to efficiently utilize the existing multi-path between two network devices by the existing well known load balancing technology.

Regarding claim 2, Zisapel teaches as follows:

Means for identifying correlation codes associated with data requests, means for associating each data request with any previous requests for the same data having a same correlation code (content router first checks to determine if the destination is

known from the destination table, see, e.g., col. 18, lines 49-51 and figure 6 and 7).

Zisapel does not teach that means for splitting the requested data between the addresses associated with the data requests.

Apostolopoulos teaches as follows:

Means for splitting the requested data (packetizer, 200 in figure 2, specify how a bit stream is to be split into packets, see, e.g., col. 5, lines 30-32 and figure 2 and multiple stream generator, 210 in figure 2, generates at least a first stream and a second stream, see, e.g., col. 5, lines 37-40) between the plurality of addresses associated with the data requests (path diversity mechanism, 134 in figure 1, sends at least a first subset packets through a first path 160 and a second subset 170 of packets through a second path, see, e.g., col. 4, lines 26-29).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include splitting the requested data and streaming different parts of the data to the different addresses requesting it as taught by Apostolopoulos in order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Regarding claims 3, 9 and 15, Zisapel teaches as follows:

Means for identifying data rates available to each of the requesting addresses (the content router presents to the client the most efficient pathway for choosing connection to the destination. Each path posses a path quality factor, which includes traffic load, packet loss and link pricing, see, e.g., col. 17, lines 41-56).

Zisapel does not teach that means for apportioning the data between the

addresses accordingly.

Apostolopoulos teaches as follows:

Based on the network information, route information, and quality of service requirements, the diverse path transmitter, 240 in figure 2, selectively transmits each subset of packets on a predetermined path (see, e.g., col. 6, lines 11-16 and figure 2).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include apportioning the subset of packets to different paths based on the capability of each path as taught by Apostolopoulos in order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Regarding claim 4, Zisapel teaches as follows:

A user terminal (client 105 and content router 145 in figure 3A) for accessing data from a server over a distributed information network (Internet 110 in figure 3A)(see, e.g., col. 15, line 61 to col. 16. line 3), said user terminal comprising:

Means for generating a plurality of access requests for identical data to be delivered by the server over a plurality of routes (routers 1 to 3, 130, 135, 140 in figure 3A)(content router sends polling requests through each of routers, see, e.g., col. 16, lines 6-10), wherein each request conveys an indication of its common origin to the targeted server (the content router provides efficient connectivity between client 105 in figure 3A and Internet servers, which implicitly provides the end user's address to the Internet servers, see, e.g., col. 15. line 56 to col. 16, line 3).

Zisapel does not teach that assembling the data sent over the plurality of routes

into a single stream for access by the user.

Apostolopoulos teaches as follows:

The receiving device (140 in figure 1) includes a packet sorter (310 in figure 3) for receiving the subsets of packets and sorting the packets to recover the original order of the packets and a recovery unit (320 in figure 3) for receiving the packets in original order and for reconstructing the communicated information (see, e.g., col. 7, lines 1-6). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include a receiving device for reconstructing the original information from multiple different paths as taught by Apostolopoulos in order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Even though Zisapel implicitly teaches providing end user's address to the Internet servers, Mizuno explicitly teaches as follows:

A storage subsystem that directly interfaces with a network, provides connections for routers with a multi-path function, and performs access load balancing among a plurality of input/output ports. Each channel controller is assigned with a channel controller network address, and a storage device is assigned with a storage device address, which is different from the network addresses of the channel controllers (see, e.g., abstract);

The channel controller (403-410 in figure 1) makes the external router (403 in figure 1) believe that there is a device with the storage device IP address which is different from the IP addresses assigned to the channel controllers (the storage device

uses its own device IP address and multiple network IP addresses, see, e.g., page 3, paragraph [0063]); and

The router (402 in figure 1) the channel controllers (403-410 in figure 1) are interconnected with each other via the input/output ports and an access packet is sent from the host computer (401 in figure 1) to access the storage device (460 in figure 1). The access packet designates the address of the storage device (see, e.g., page 3, paragraph [0066]).

Therefore Mizuno teaches the communication between a host computer and a storage device via multiple channel controllers' IP addresses, and the storage device IP address is given to the host computer for this communication.

Also it is well known in the art that any sending device knows the address of receiving device as well as the IP addresses of routers in the multi-path routing.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include using channel controller's IP address and the storage device's IP address together in communication between the host computer and the storage device as taught by Mizuno in order to efficiently utilize the existing multi-path between two network devices by the existing well known load balancing technology.

Regarding claim 5, Zisapel teaches as follows:

Means for generating a first access request (polling requests) having a correlation code indicative of its origin (client IP address and each router address)(see, e.g., col. 16, lines 4-14); and

Means for determining the best path among multiple paths (see, e.g., col. 17, lines 63-65).

Zisapel does not teach that means for determining whether the data rate of the data received in response to the first request meets a predetermined level and means to generate one or more further requests over different routes using the same correlation code.

Apostolopoulos teaches as follows:

Based on the network information, route information, and quality of service requirements (predetermined level), the diverse path transmitter, 240 in figure 2, selectively transmits each subset of packets on a predetermined path (see, e.g., col. 6, lines 11-16 and figure 2).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to utilize multiple paths to transmit the same data based on the quality of service requirements of the data and the capacities of the multiple paths by determining the proper paths before the first transmission as taught by Apostolopoulos in order to determine proper paths among all available paths based on the service requirements of the data and the route information for each paths before first transmission and utilize the proper paths based on the determination.

Regarding claims 6 and 10, Zisapel teaches all the claim limitations except for buffering the incoming data to allow its reassembly in a manner prescribed by the data content.

Apostolopoulos teaches as follows:

The receiving device (140 in figure 1) includes a packet sorter (310 in figure 3) for receiving the subsets of packets and sorting the packets to recover the original order of the packets and a recovery unit (320 in figure 3) for receiving the packets in original order and for reconstructing the communicated information (see, e.g., col. 7, lines 1-6).

It is well known in the art and inherent to have buffering means to accomplish the packet sorting in order to recover the original information after being received subsets of the original information through different paths.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include buffering means as taught by Apostolopoulos in order to reassemble the original information properly.

Regarding claim 7, Zisapel, Apostolopoulos and Mizuno teach all the claim limitations as explained above regarding claims 1 and 4.

Regarding claim 8, Zisapel, Apostolopoulos and Mizuno teach all the claim limitations as explained above regarding claims 1 and 5.

Regarding claims 11-13 and 17, Apostolopoulos teaches path diversity technology which sends different subsets of packets over different paths (see, e.g., abstract) and Mizuno teaches load balancing technology among a plurality of input/output ports (see, e.g., abstract).

It is inherent that the overall data rate from each path is an aggregate of individual data rates available to each of the plurality of paths in the load balancing or the path diversity technology.

Regarding claim 14, Zisapel teaches as follows:

A method of providing data to one or more user terminals (client 105 in figure 3A via a content router 145 in figure 3A) connected to a network (Internet 110 in figure 3A) (provide efficient connectivity between client and Internet servers by sending polling request and receiving reply, see, e.g., col. 15, lines 66-67 and col. 16, lines 15-18), comprising:

Receiving a plurality of data requests (polling requests) for identical data (polling results) from a plurality of requesting addresses (content router, 145 in figure 3A, assigns respective network addresses to client 105 in figure 3A, see, e.g., col. 16, lines 11-12)(content router sends polling requests through each of routers, see, e.g., col. 16, lines 6-10), wherein each data request includes an identification of a requesting user terminal (the content router provides efficient connectivity between client 105 in figure 3A and Internet servers, which implicitly provides the end user's address to the Internet servers, see, e.g., col. 15. line 56 to col. 16, line 3).

Zisapel does not teach that splitting the requested data and streaming different parts of the data to the different addresses requesting it.

Apostolopoulos teaches as follows:

A path diversity transmission system for improving the quality of communication over a lossy packet network and the path diversity transmission system sends different subsets of packets (different pats of the data) over different paths (different addresses requesting it)(see, e.g., col. 3, lines 32-36).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include splitting the requested data and streaming

different parts of the data to the different addresses requesting it as taught by Apostolopoulos in order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Mizuno teaches as follows:

Even though Zisapel implicitly teaches providing end user's address to the Internet servers, Mizuno explicitly teaches as follows:

A storage subsystem that directly interfaces with a network, provides connections for routers with a multi-path function, and performs access load balancing among a plurality of input/output ports. Each channel controller is assigned with a channel controller network address, and a storage device is assigned with a storage device address, which is different from the network addresses of the channel controllers (see, e.g., abstract);

The channel controller (403-410 in figure 1) makes the external router (403 in figure 1) believe that there is a device with the storage device IP address which is different from the IP addresses assigned to the channel controllers (the storage device uses its own device IP address and multiple network IP addresses, see, e.g., page 3, paragraph [0063]); and

The router (402 in figure 1) the channel controllers (403-410 in figure 1) are interconnected with each other via the input/output ports and an access packet is sent from the host computer (401 in figure 1) to access the storage device (460 in figure 1). The access packet designates the address of the storage device (see, e.g., page 3, paragraph [0066]).

Therefore Mizuno teaches the communication between a host computer and a storage device via multiple channel controllers' IP addresses, and the storage device IP address is given to the host computer for this communication.

Also it is well known in the art that any sending device knows the address of receiving device as well as the IP addresses of routers in the multi-path routing.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include using channel controller's IP address and the storage device's IP address together in communication between the host computer and the storage device as taught by Mizuno in order to efficiently utilize the existing multi-path between two network devices by the existing well known load balancing technology.

Regarding claim 16, Apostolopoulos teaches as follows:

Limiting a number of connections available to the same user terminal to a predetermined threshold number such that a number of simultaneous connections for the same data for the same user terminal is limited (the application and the path-diversity aware node (1008 in figure 10) negotiate to determine an appropriate combination of number of paths, QoS for each path, and available paths before beginning the connection, as well as make changes during the connection, see, col. 11, lines 4-37).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include determining the number of paths available for each receiving packet before beginning the connection as taught by Apostolopoulos in

order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Response to Arguments

6. Applicant's arguments filed 9/21/2007, with respect to claim 1-17 have been considered but are moot in view of the new ground(s) of rejection.

A. Summary of Applicant's Arguments

In the remarks, the applicant argues as followings:

1) regarding amended claims 1, Zisapel discloses that the server 150 replies to each of the network addresses and the replies are accordingly transmitted through each of the respective ISPs. Based on these polling results returned from the server 150, the content router 145 chooses only one of the ISPs as its choice for connecting the client 105 with the server 150;

2) regarding amended claims 1, 4 and 7, the server 150 itself has no knowledge that the three polling requests ultimately originated from the content router 145 associated with the client 105. Thus, contrary to the Examiner's allegation, Zisapel does not teach or suggest the feature of the first means arranged to identify whether a plurality of addresses making a corresponding plurality request for the same data are associated with the same end user; and

3) regarding newly added claims 11-17.

B. Response to Arguments:

In response to argument 1) Zisapel teaches the server 150 replies to each of the network addresses (applicant's plurality of addresses) and the replies are accordingly

transmitted through each of the respective ISPs (sending the polling results through multiple ISPs to the content router 145, see, e.g., col. 16, lines 4-34).

Apostolopoulos teaches a load balancing or path diversity among multiple paths as follows:

A path diversity transmission system for improving the quality of communication over a lossy packet network and the path diversity transmission system sends different subsets of packets (different parts of the same data) over different paths (different addresses requesting it)(see, e.g., col. 3, lines 32-36).

Therefore, it would be obvious to combine Zisapel's identifying means and Apostolopoulos's path diversity in order to send a response for the plurality of requests to the multiple paths.

In response to argument 2), originally the applicant claimed that an Internet application to identity whether a plurality of addresses making requests for the same data are associated with the same end user wherein the Internet application is interpreted as the content router included in the process of Internet application (the content router provides efficient connectivity between client 105 in figure 3A (equivalent to the applicant's end user) and Internet servers, which inherently provides the end user's address to the Internet servers, see, e.g., col. 15. line 56 to col. 16, line 3).

Claim 1 is to be given their broadest reasonable interpretation during prosecution, and the scope of a claim cannot be narrowed by reading disclosed limitations into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2D 1023,

1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2D 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541,550 (CCPA 1969).

The amended claims 1, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel et al. (U.S. Patent No. 6,665,702 B1) in view of Apostolopoulos et al. (U.S. Patent No. 6,868,083 B2) and further in view of Mizuno (U.S. Pub. No. 2003/0018741 A1) as explained above.

In response to argument 3), claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel et al. (U.S. Patent No. 6,665,702 B1) in view of Apostolopoulos et al. (U.S. Patent No. 6,868,083 B2) and further in view of Mizuno (U.S. Pub. No. 2003/0018741 A1) as explained above.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeong S. Park whose telephone number is 571-270-1597. The examiner can normally be reached on Monday through Friday 7:00 - 3:30 EST.

NATHAN FLYNN
SUPERVISORY PATENT EXAMINER

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JP

November 27, 2007